



EUROPEAN
COMMISSION

Community research



EC contribution to R&D in GEO

EGIDA Stakeholder Network and Advisory Board Joint Workshop
Connecting GEOSS and its Stakeholders in S&T

Bonn, Germany, May 9-11, 2011

Gilles OLLIER

Head of Sector

Earth observation

Management of Natural Resources – DG RTD.I.3

Directorate Environment – DG RTD.I

Directorate General Research & Innovation DG RTD

EUROPEAN COMMISSION

Gilles.Ollier@ec.europa.eu





EUROPEAN
COMMISSION

Community research



European Participation in GEO

European Participating Organisations

ECMWF, EUMETSAT, ESA, EEA, etc.... well committed to the GEO tasks, provision of space and in-situ infrastructures and Earth Observation services.

European Countries

National institutions from most MS are committed in GEO tasks, contributing at the integration of national systems and research in the global context. E.g.

- Norway (NSC) co-leads Forest Carbon Tracking Task;
- France (BRGM) co-lead of Disasters SBA tasks
- The Netherlands (ITC) leads several Capacity Building sub-tasks;
- Italy (CNR) co-leads HE and EC tasks
- Germany (DLR) co- leads EN task;
- Greece (MKFES) leads EC sub-task
- Spain (AEMET) leads tasks CB-09-01, HE-09-03a

European Commission

- Research components for GEOSS through FP7 ENV theme (emphasis on societal benefits and in-situ observations), FP7 SPACE theme (GMES remote-sensing and operational aspects)
- Standards and Interoperability component through the INSPIRE Directive and the JRC
- Capacity Building component through Community activities including FP7 projects.

High Level Working Group

It is coordinated by the European Commission's Directorate-General for Research, and it meets regularly



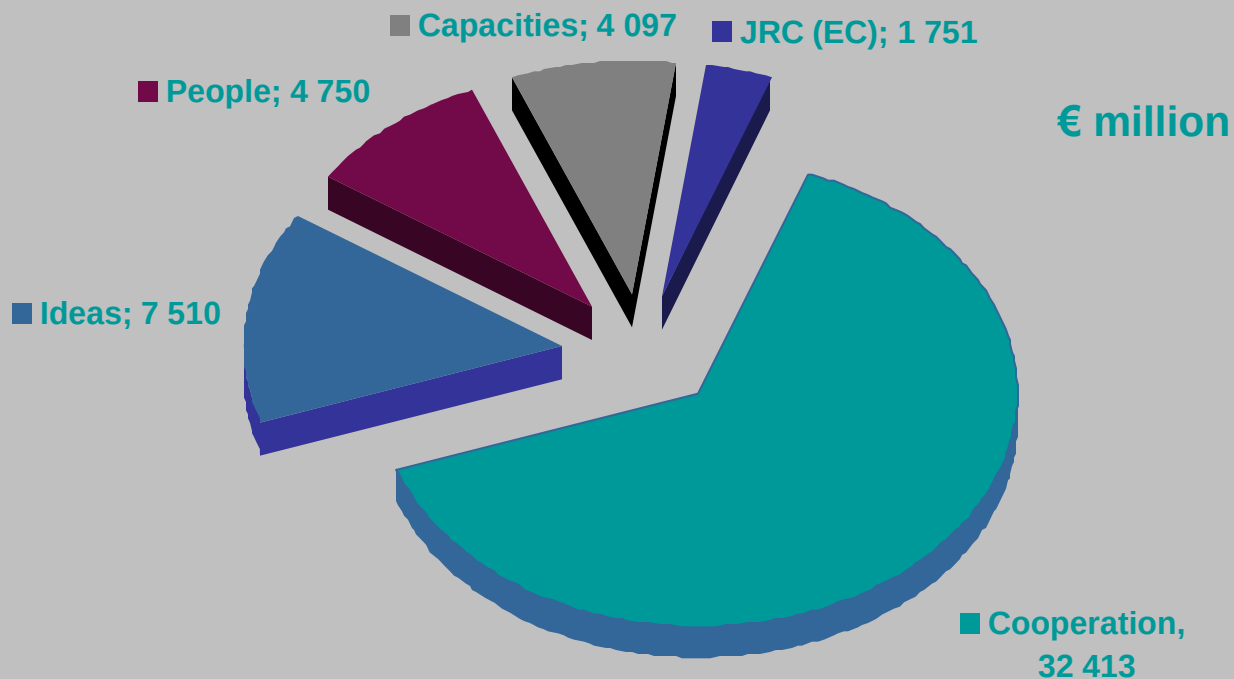
EUROPEAN
COMMISSION

Community research

European Research



FP7 2007 –2013 : Specific Programmes





EUROPEAN
COMMISSION

Community research



EC FP7-ENV projects related to GEO

Sub-activity 6.4.1 - Earth and ocean observation system (~20 M€/yr)

Introduced in FP7 Environment priority Cooperation Specific Program to support Research activities needed for GEOSS:

- ***Development and integration of observation systems*** for environmental and sustainability issues in the framework of GEOSS (complementary to GMES)
- ***Making systems interoperable*** and ***optimising the information*** for understanding, modelling and predicating environmental phenomena, for assessing, exploring and managing natural resources.
- ***European efforts*** to be ***brought in the global context*** as foreseen through GEO

FP7 Cooperation Environment Theme: Rational of annual WP Earth Observation

➤ 2007 call

Coverage of several GEO Societal Benefits Areas by involving the European S&T Community (Carbon Cycle, Biodiversity, Ocean Interior, Soil, Water)

➤ 2008 call

Research supporting the Initial GEOSS Information System in relation with Europe's development of INSPIRE

➤ 2009 call

Emerging observing systems (Environment and Health, Sustainable exploitation of mineral resources) / Further structuring the European approach in GEO

➤ 2010 call

New tasks introduced in the 2009-2011 GEO Work Plan (Global Mercury Observing System, promoting GEO in S&T Community) links between GEO and new technologies (data visualisation, GNSS, reanalysis)

➤ 2011 call

Strong emphasis on Capacity Building (EO for agri and forestry in Africa, Monitoring of Med African costal zone) , Data sharing (GOOS, atmospheric hazards, water management) Global Observation systems (Carbon)

➤ Capacity building: Annual emphasis (EU policy & core GEO activity)



EUROPEAN
COMMISSION

Community research

ENV- 2012 Call for Proposals Provisional list of topics related to GEOSS



- **Assessing global biological resources: the European contribution to the Global Earth Observation Biodiversity Observation Network (GEO BON)**
Global system of in situ marine and terrestrial observations, integrated with remote sensing measurements, for the monitoring and assessment of global biological resources.
(1 stage - up to 1 project, max. EU contribution 9 M€)
- **Developing community-based environmental monitoring and information systems using innovative and novel earth observation applications**
Enable and demonstrate the direct transfer of environmental knowledge for policy, industrial and societal use
(2 stages - several projects to be funded; max EU contribution 9 M€)
- **Long-term monitoring experiment in geologically active regions of Europe prone to natural hazards: the Supersite concept**
Increased European technical know-how for the monitoring of Geological disaster and contribution to the development of the relevant European industrial sector;
(2 stages - several projects to be funded; max EU contribution 6 M€)



EUROPEAN
COMMISSION

Community research



ENV - 2012 Call for Proposals - Timeline

- **17/06/2011:** Infoday - Brussels: info session, brokerage sessions
- **20/07/2011:** Publication of the call on CORDIS
- **20/10/2011:** 1st stage submission deadline for 2-stage proposals
- **21/11 – 2/12:** 1st stage evaluation of 2-Stage proposals
- **08/03/2012:** 2nd stage submission deadline of 2-stage selected proposals
- **08/03/2012:** deadline for submission of 1-stage proposals
- **June 2012 :** grant agreement negotiations for selected proposals



EUROPEAN
COMMISSION

Community research



EC FP7-ENV projects related to GEO

- **FP7-ENV tool to fund research projects in the domain of GEO**
- **Main principles:**
 - maintenance of the portal and the availability of data have to be covered beyond the end of the project
 - FP7 ENV projects all set to register into GEOSS registry, and to participate in initiatives as AIP (former AR-07-02, now AR-09-01b)
 - Since 2008, as part of their dissemination plan, the projects funded by EC have to commit in producing appealing multimedia material showcasing to the public at large the activities performed



EUROPEAN
COMMISSION

Community research



Contribution of FP7-ENV projects to GEOSS

TRANSVERSE GEOSS (*GEOSS Building Blocks*)

ARCHITECTURE

EuroGEOSS (08)
GEOVIQUA (10)
GEOOW (11)

DATA MANAGEMENT

GEOOW (11)

USER ENGAGEMENT

EUGENE (09)

CAPACITY BUILDING

DevCocast (2007)
AEGOS (2007)
EnviroGRIDS (2008)
SEOCA (2009)
GEONETCAB (2009)
BalkanGEONet (10)
OBSERVE (10)
MEDINA (11)
AGRICAB (11)

SCIENCE AND TECHNOLOGY

EGIDA (10)
GfG2 (10)



EUROPEAN
COMMISSION

Community research



EC FP7-ENV projects related to GEO

Proposal full title	EuroGEOSS: a European approach to GEOSS
Type of funding scheme	Collaborative project (large-scale integrating project)
Work program	Provision of operational options for the GCI. Implements a brokering service that allows finding and accessing data from a wide range of standards and domains specific practices including the use of a semantically rich querying capability that hopefully will be incorporated in the GCI ENV.2008.4.1.1.1: European Environment Earth Observation system supporting INSPIRE and compatible with GEOSS
Start date	01 May 2009
End date	01 May 2012





EUROPEAN
COMMISSION

Community research



Contribution of FP7-ENV projects to GEOSS

THE 9 GEOSS SOCIETAL BENEFIT AREAS (GEOSS for Society)

Water



Weather



Ecosystem



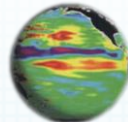
Agriculture



Biodiversity



Climate



Energy



Health



Disaster



CEOP-AEGIS(07)
HYPOX(08)
EUGENE (09)

COCOS(07)
EuroSITES(07)
Acobar(07)
EUGENE(09)
ERACLIM(10)
GEOCARBON(11)

Call 2011

EnerGEO(08)

EO2HEAVEN (09)
EO-MINERS (09)
Impact Min (09)
GMOS (10)

AGRICAB (11)

EBONE (07)
HYPOX(08)

EnviroGRIDS(08)
HYPOX(08)
EO MINERS (09)

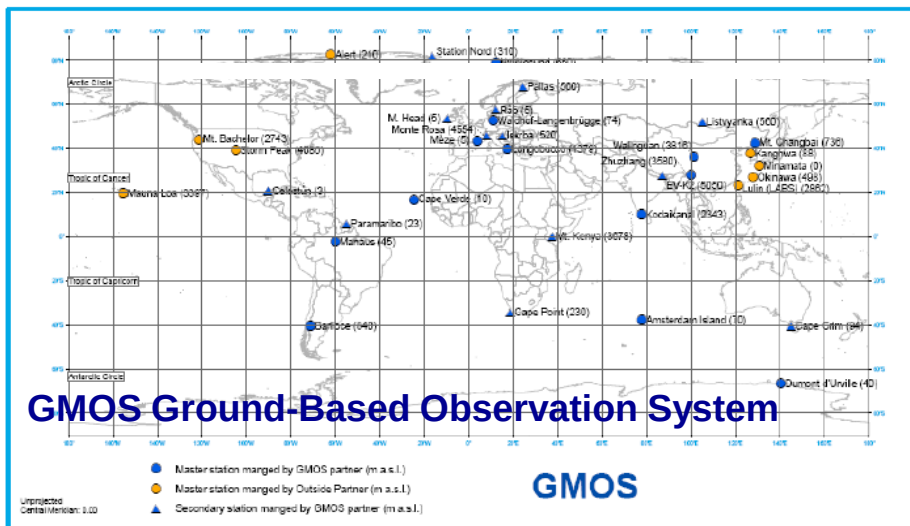
EO-MINERS (09)
ImpactMin (09)
EUGENE (09)



EUROPEAN
COMMISSION

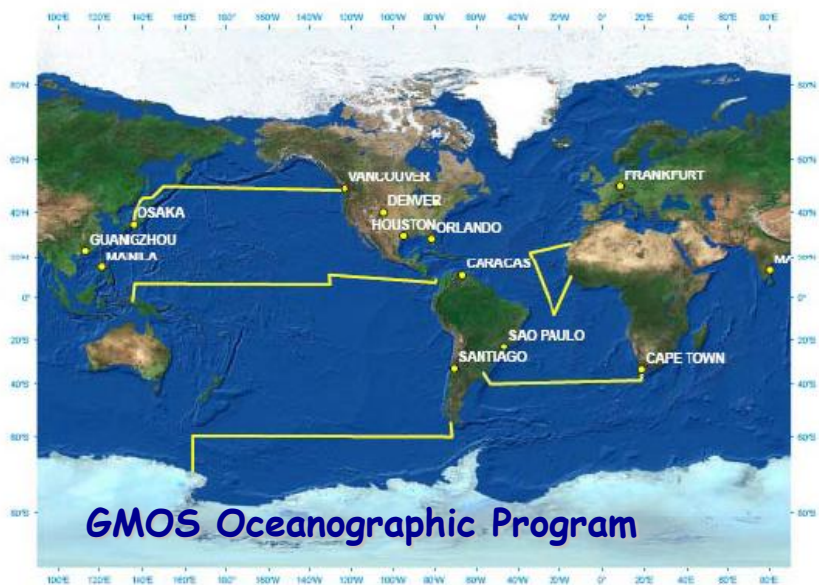
Community research

Contribution to Global Environmental Research: GMOS: Global Observation System for Mercury



GMOS will validate **atmospheric mercury modelling systems**, identify source-emitter relationship and support key European and international programmes including:

- ✓ **GEO Task He-09-02d "Global Observation System for Mercury"**
- ✓ **UNEP Mercury Program - Global Partnership on Atmospheric Mercury Transport and Fate Research (F&T)**
- ✓ **Task Force on Hemispheric Transport of Air Pollutants (TF HTAP) under the UNECE-LRTAP conventions.**
- ✓ **EU Thematic Strategy on air pollution, Marine conventions GMES, etc.**



GMES projects under FP7-SPACE

➤ **5 core services**

- Atmosphere: **MACC**
- Emergency response: **SAFER**
- Land: **geoland2**
- Marine: **MyOcean**
- Security: **G-MOSAIC**

➤ **In addition to main GMES services, additional projects are co-financed by the EC under the FP7 to**

- shaping GMES services
- bringing quality services to citizens
- monitoring natural hazards
- taking on the climate change challenge
- supporting the cooperation with Africa in the domain of environmental monitoring.

Overall budget: ~560 M€ in the period 2007-2013

GEO → **GMES**

GEO is an integral part of the International Cooperation strategy of GMES:

- Improve the access to global capacities and datasets
- Synchronize GMES services responding to global needs with other initiatives
- Improve GMES support to developing countries
- Foster new international cooperation opportunities
- With its federating role, GMES will be instrumental for GEO but at the same time will benefit from it through access to worldwide data feeding its services, hence consolidating its decision-making capacity.

Towards a coherent policy for Research Infrastructures: ESFRI

- A European Strategy Forum on Research Infrastructures (launched in April 2002)
- Brings together representatives of the 27 Member States, Associated States, and one representative of the European Commission (EC)
- To discuss the long term vision at European level and to support the development of a European RI policy
 - A Roadmap Report with 44 projects
 - Worth ~18 B€ investments over the next ~10 years

The ESFRI roadmap

Identifies 44 new (or major upgrade of) Research Infrastructures of pan-European interest

The EC funds 3 additional projects from the CERN Council strategic roadmap for particle physics*

Social Sc. & Hum. (5)	Life Sciences (10)		Environmental Sciences (10)		Material and Analytical Facilities (6)	Physics and Astronomy (11)		Energy (4)	e-Infra-structures (1)
SHARE	BBMRI	ELIXIR	ICOS	EURO-ARGO	EUROFEL	ELI	TIARA *	ECCSEL	PRACE
European Social Survey	ECRIN	INFRA FRONTIER	LIFEWATCH	IAGOS	EMFL	PRINS	CTA	JHR	
CESSDA	INSTRUCT	EATRIS	EMSO	EPOS	European XFEL	SPIRAL2	FAIR	IFMIF	
CLARIN	EU-OPENSREEN	EMBRIC	SIOS	EISCAT_3D	ESRF Upgrade	E-ELT	SKA	HIPER	
DARIAH	Euro BioImaging	ERINHA BSL4 Lab	COPAL	AURORA BOREALIS	NEUTRON ESS	KM3NeT	ILC-HIGRADE *		
					ILL20/20 Upgrade	SLHC-PP *			

Distributed research infrastructures

Single sited research infrastructures

The term “distributed RI”, as used by ESFRI, refers to a facility with one unique name and legal status, one management structure, one strategy and development plan, and having one annual report and fiscal address although its research facilities are located in different sites and different countries



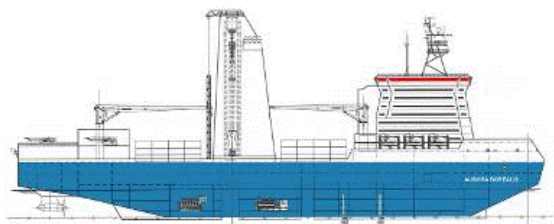
EUROPEAN
COMMISSION

Community research



Environmental Sciences

AURORA BOREALIS



IAGOS-ERI



EUFAR COPAL

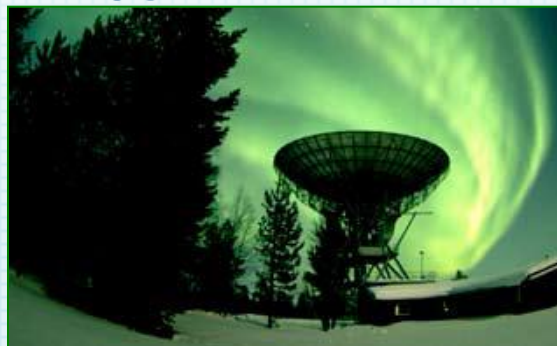
LIFE-WATCH



EURO-ARGO



EPOS



SIOS



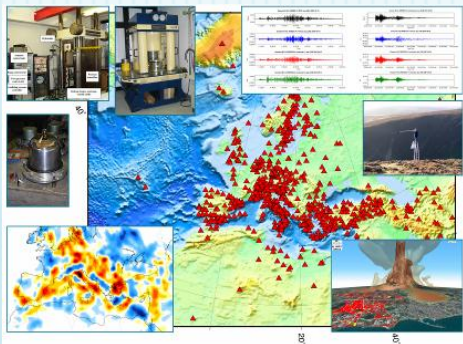
EMSO



ICOS



EISCAT



Conclusions

Investment benefits to European Environmental Research and GEOSS:

- **GEO is a unique strategic platform to promote international collaboration in Environmental Research:**
 - Collaboration with Research partners outside Europe: China, Africa, US
 - Recognition of EU Research Capabilities and Competence at int'l level,
 - Support to Capacity Building in ACP countries
- **In line with the spirit of the Framework Programme, delivering information and products for the implementation of European policies - e.g. sustainable exploitation of Mineral Resources '09 Call, Mercury topic in the '10 Call**
- **The development of global sets of data is a necessity for environmental research in many domains: climate (e.g. Carbon Cycle), ocean, health etc... European Researchers have both a lot to gain and much to contribute for those global data sets:**
 - Access to new data
 - Data cohesion at international level
 - Constitution of global data repositories.